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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/909,195

07/19/2001

Kouichi Saitou

35061-02500

9740

7590

05/05/2004

Milbank, Tweed, Hadley & McCloy LLP
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New York, NY 10005-1413

EXAMINER

MACCHIAROLO, PETER J


ART UNIT

PAPER NUMBER

2879

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/909,195	Applicant(s) SAITOU ET AL.	
	Examiner Peter J Macchiarolo	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The reply filed on 03/29/2004 consists of remarks related to the prior rejection of claims in the previous Office Action. However, claims 1-13 are not allowable as explained below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-8, and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Donofrio et al (USPN 4485329; "Donofrio") in view of previously cited Hidaka et al (USPN 6404119; "Hidaka").**
3. In regards to claims 1, 2, 4, 8, and 10, Donofrio shows in figures 1 and 2, a projection tube comprising a panel (33) which forms a phosphor screen on an inner surface thereof, a funnel (not labeled) neck portion (not labeled) and a stem portion (not labeled) which seals the neck portion, wherein an electron gun emits a single electron beam (17) to the phosphor screen, a maximum operating voltage of the electron gun is set to equal to or more than 30kv.¹
4. Donofrio is silent to the specifics of the neck portion and electron gun.
5. However, Hidaka shows in figures 1 and 2, a neck portion includes a first neck portion (8a) which constitutes a portion connected to the funnel portion and has a first outer diameter of

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the neck portion ($\emptyset a$), and a second neck portion (8b), which constitutes a portion which accommodates an electron gun (10) and has a second outer diameter of the neck portion ($\emptyset b$), the first outer diameter of the neck portion is set smaller than the second outer diameter of the neck portion, the entire electron gun is in the second neck portion, and a deflection yoke (11b) which deflects the electron beam is mounted on the first neck portion having the first neck outer diameter and that the first outer diameter of the neck portion is set to equal or less than 29.1 mm². Hidaka further teaches this configuration reduces the power needed to effectively deflect an electron beam to the phosphor screen, and allows for an improvement in the attachment of the deflection yoke.³

6. Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the projection tube of Donofrio, including the neck configuration of Hidaka to reduce the power needed to effectively deflect an electron beam to the phosphor screen and facilitate an improved deflection yoke attachment.

7. In regards to claim 3, although Donofrio and Hidaka are both silent to a maximum cathode current being set to equal to or more than 4 mA, this is a well known value the art. Further, the Examiner notes that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

8. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct Donofrio's projection tube with Hidaka's neck configuration

¹ Donofrio, col. 3, ll. 32-45.

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and a maximum cathode current set to equal 4mA or more, since this is a well known configuration in the art, and one of routine skill would discover the optimum values.

9. In regards to claims 5, 6, 11, and 12, Donofrio and Hidaka are both silent to the second outer diameter of the neck portion is set to 36.5mm or more, or that the pins for supplying voltages to electrodes of the electron gun have a specific diameter of 15.12mm.

10. However, Hidaka does infer that many different diameters are possible and teaches the final diameters are determined based on specific platform requirements.⁴ Further, one of ordinary skill in the art would arrive at the second outer diameter being set to 36.5mm or more, since such modifications would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

11. Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the projection tube of Donofrio and Hidaka (above) with the second outer diameter being set to 36.5mm or more, since this is considered being within the level of ordinary skill in the art.

12. In regards to claims 7 and 13, Donofrio shows the stem portion includes a plurality of pins arranged in a circle.

13. Donofrio and Hidaka are both silent to the plurality of pins arranged in a circle having the diameter of 15.12 mm.

² Hidaka, col. 1, ll. 66 to col. 2, line 2; and col. 8, ll. 50-55.

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14. However, it would have been an obvious matter of design choice to arrange the pins with a diameter of 15.12 mm, since Applicant has not adequately disclosed any testing or analytical data which establishes criticality for these modifications, or recites any specific advantage the invention benefits from over the prior art from this modification. It appears that Donofrio's pins would perform equally well when being arranged in a diameter of 15.12 mm. Further, one would arrive at this modification for a variety of reasons, including material availability, and manufacturing processes with sensitive requirements.

15. Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct Donofrio and Hidaka's projection tube (above), with the pins being arranged in a diameter of 15.12.

16. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Donofrio in view of Hidaka, in further view of previously cited Konda et al (USPN 6,133,685; "Konda").

17. In regards to claim 9, Donofrio and Hidaka are silent to a convergence yoke mounted on the second neck portion having the second neck outer diameter.

18. However, Konda teaches in figure 1, that a convergence yoke (8) is positioned on the neck portion so as to pass through the anodic electrode (1), which is equivalent to Applicant's second neck portion, and this configuration prevents the efficiency of modulating electron beam

³ Hidaka, col. 3, ll. 11-14; ll. 23-26.

⁴ Hidaka, col. 7, ll. 6-47.

trajectories from being deteriorated, and the heat generation at the anodic electrode (1a) can be reduced.⁵

19. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the projection tube of Donofrio and Hidaka (above), including Konda's convergence yoke to prevent the efficiency of modulating electron beam trajectories from being deteriorated, and the heat generation at the anodic electrode can be reduced.

Response to Arguments

20. Applicant's arguments filed 04/15/2004 have been fully considered but are moot in view of the new ground(s) of rejection.

Conclusion

21. Previously cited U.S. Patent 5909079 to Uchida et al is evidence that a maximum cathode current being set to or more than 4mA is well known in the art.

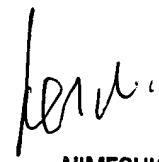
22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Macchiarolo whose telephone number is (571) 272-2375. The examiner can normally be reached on 8:30 - 5:00, M-F.

23. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571) 272-2475. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

⁵ Konda, col. 4, ll. 26-35

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24. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, consisting of a large, stylized 'M' with a smaller 'pjm' written inside a circle to its left.A handwritten signature in black ink, appearing to be 'Nimesh' followed by a stylized 'D. Patel'.

**NIMESHKUMAR D. PATEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800**